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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/040,254	01/04/2002	Thierry Valet	59559-8017.US01	9462
22918	7590	02/25/2010		
PERKINS COIE LLP				
P.O. BOX 1208				
SEATTLE, WA 98111-1208				
EXAMINER				
PIZIALI, JEFFREY J				
ART UNIT		PAPER NUMBER		
2629				
NOTIFICATION DATE		DELIVERY MODE		
02/25/2010		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/040,254

Applicant(s)

VALET, THIERRY

Examiner

JEFF PIZIALI

Art Unit

2629

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 December 2009 and 02 September 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 8 and 25-38 is/are pending in the application.
- 4a) Of the above claim(s) 38 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 8 and 25-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 September 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Prior Person's Patent Drawing Review (PTO-544)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Newly submitted *claim 38* is directed to a species that is independent or distinct from the species elected on *7 May 2007* for the following reasons:

A Restriction Requirement was mailed on *25 July 2006* directed to the following patentably distinct species:

Species I, drawn to *a handheld computer device having a motion sensor embedded within the device* [see Page 7, Line 32 - Page 8, Line 2 of the instant Specification, for instance], and

Species II, drawn to *a handheld computer device having an add-on attachment which incorporates a motion sensor* [see Fig. 3; Page 7, Lines 29-31 of the instant Specification, for instance].

The Applicant elected ***Species I*** (without traverse) on *7 May 2007*.

Newly submitted *claim 38* is directed to non-elected ***Species II***.

Accordingly, ***claim 38 is withdrawn*** from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. *Claims 1-5, 8, and 25-37* are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement.

The claims contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention.

Claim 1 recites, "*the movement is used by the processor to control the display device*" (line 5).

Claim 5 recites, "*the movement of said hand held device controls an orientation of an object displayed on said display device*" (line 2).

Claim 25 recites, "*the movement is used by the processor to control the display device*" (line 8).

Claim 26 recites, "*movement of said hand-held device controls an orientation of an object displayed on said display device*" (line 2).

Claim 29 recites, "*the angle theta is selected to optimize height of the hand-held device*" (line 2).

Claim 32 recites, "*the angle ϕ is selected to optimize height of the hand-held device*" (line 2).

Claim 33 recites, "*the movements are used by the processor to control an orientation of an object viewed on said display device*" (line 6).

Claim 36 recites, "*the angle θ and the angle ϕ are selected to optimize a size of the device*" (line 2).

However, the original disclosure merely teaches, "*Central to this invention is the concept that motion of a display device controls an object viewer, where the object being viewed is typically essentially stationary in virtual space in the plane surrounding the display device... The hand held computer 20 is considered to have a processor internal to the case 20 controlling the display device 28. The motion sensor incorporated in attachment 60, or possibly found internal to the hand held device, would preferably include a mechanism providing the internal processor with a motion vector measurement" (see page 7, line 23 - page 8, line 7).*

Moreover, the original disclosure only teaches, "*The angle of the accelerometer chip is optimized for height and size constraints of the device in which it is placed.*" (see page 4, line 6).

The original disclosure does not appear to anywhere teach such subject matter as the processor using movement to control the display.

The original disclosure does not appear to anywhere teach such subject matter as hand-held device movement controlling the orientation of a displayed object.

The original disclosure does not appear to anywhere teach such subject matter as the processor using movements to control the orientation of a object viewed on the display.

The original disclosure does not appear to anywhere teach such subject matter as selecting an angle to optimize the size/height of the hand-held device.

4. *Claims 1-5, 8, and 25-37* are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement.

The claims contain subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 1 recites, "*the movement is used by the processor to control the display device*" (line 5).

Claim 5 recites, "*the movement of said hand held device controls an orientation of an object displayed on said display device*" (line 2).

Claim 25 recites, "*the movement is used by the processor to control the display device*" (line 8).

Claim 26 recites, "*movement of said hand-held device controls an orientation of an object displayed on said display device*" (line 2).

Claim 29 recites, "*the angle theta is selected to optimize height of the hand-held device*" (line 2).

Claim 32 recites, "*the angle phi is selected to optimize height of the hand-held device*" (line 2).

Claim 33 recites, "*the movements are used by the processor to control an orientation of an object viewed on said display device*" (line 6).

Claim 36 recites, "*the angle theta and the angle phi are selected to optimize a size of the device*" (line 2).

However, the original disclosure merely teaches, "*Central to this invention is the concept that motion of a display device controls an object viewer, where the object being viewed is typically essentially stationary in virtual space in the plane surrounding the display device... The hand held computer 20 is considered to have a processor internal to the case 20 controlling the display device 28. The motion sensor incorporated in attachment 60, or possibly found internal to the hand held device, would preferably include a mechanism providing the internal processor with a motion vector measurement" (see page 7, line 23 - page 8, line 7).*

Moreover, the original disclosure only teaches, "*The angle of the accelerometer chip is optimized for height and size constraints of the device in which it is placed.*" (see page 4, line 6).

The original disclosure does not appear to be enabling for the subject matter of the processor using movement to control the display.

The original disclosure does not appear to be enabling for the subject matter of hand-held device movement controlling the orientation of a displayed object.

The original disclosure does not appear to be enabling for the subject matter of the processor using movements to control the orientation of a object viewed on the display.

The original disclosure does not appear to be enabling for the subject matter of selecting an angle to optimize the size/height of the hand-held device.

5. The remaining claims are rejected under 35 U.S.C. 112, first paragraph, as being dependent upon rejected base claims.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. *Claims 1-5, 8, and 25-37* are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

8. Claim 1 provides for "*the movement is used by the processor*" (*line 5*), but, since the claim does not set forth any steps involved in this method/process, it is unclear what method/process applicant is intending to encompass.

Claim 25 provides for "*the movement is used by the processor*" (*line 8*), but, since the claim does not set forth any steps involved in this method/process, it is unclear what method/process applicant is intending to encompass.

Claim 33 provides for "*the movements are used by the processor*" (*line 6*), but, since the claim does not set forth any steps involved in this method/process, it is unclear what method/process applicant is intending to encompass.

A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

The Applicant is respectfully requested to clarify how the movement(s) is/are being used by the processor.

9. Claim 3 recites the limitation "*the device*" (*line 2*). There is insufficient antecedent basis for this limitation in the claim.

The Applicant is respectfully requested to clarify whether this limitation is intended to refer to the earlier recited "*a hand held device*" (*claim 1, line 1*) or "*a display device*" (*claim 1, line 2*).

10. Claim 4 recites the limitation "*the Z footprint*" (*line 3*). There is insufficient antecedent basis for this limitation in the claim.

The Applicant is respectfully requested to clarify whether or not "*a Z footprint*" is a required element of the claimed invention.

11. The term "*optimize height of the hand-held device*" in claim 29 (*line 2*) is a relative term which renders the claim indefinite.

The term "***optimize height of the hand-held device***" in claim 32 (*line 2*) is a relative term which renders the claim indefinite.

The term "***optimize a size of the device***" in claim 36 (*line 2*) is a relative term which renders the claim indefinite.

The term "***optimize***" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

The Applicant is respectfully requested to clarify in what way the height/size is "***optimized***."

12. Claim 30 recites the limitation "***the angle theta***" (*line 4*). There is insufficient antecedent basis for this limitation in the claim.

The Applicant is respectfully requested to clarify whether or not "***an angle theta***" is a required element of the claimed invention.

13. Claim 33 recites the limitation "***the hand-held device***" (*line 6*). There is insufficient antecedent basis for this limitation in the claim.

The Applicant is respectfully requested to clarify whether or not "***a hand-held device***" is a required element of the claimed invention.

14. Claim 33 recites the limitation "***the display device***" (*line 7*). There is insufficient antecedent basis for this limitation in the claim.

The Applicant is respectfully requested to clarify whether or not "*a display device*" is a required element of the claimed invention.

15. The term "*a Z footprint*" in claim 35 (*line 2*) is a relative term which renders the claim indefinite.

The term "*Z*" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

The Applicant is respectfully requested to clarify in what the variable/term "*Z*" is intended to represent.

16. Claim 35 recites the limitation "*the device*" (*line 2*). There is insufficient antecedent basis for this limitation in the claim.

The Applicant is respectfully requested to clarify whether this limitation is intended to refer to the earlier recited "*the hand-held device*" (*claim 33, line 6*) or "*said display device*" (*claim 33, line 7*).

17. Claim 36 recites the limitation "*the device*" (*line 2*). There is insufficient antecedent basis for this limitation in the claim.

The Applicant is respectfully requested to clarify whether this limitation is intended to refer to the earlier recited "*the hand-held device*" (*claim 33, line 6*) or "*said display device*" (*claim 33, line 7*).

18. Claim 37 recites the limitation "***the device***" (*line 1*). There is insufficient antecedent basis for this limitation in the claim.

The Applicant is respectfully requested to clarify whether this limitation is intended to refer to the earlier recited "***a hand-held device***" (*claim 25, line 1*) or "***a display device***" (*claim 25, line 2*).

19. The remaining claims are rejected under 35 U.S.C. 112, second paragraph, as being dependent upon rejected base claims.

Claim Rejections - 35 USC § 103

20. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

21. *Claims 1-3, 5, 8, and 25-28, 30, 31, 33, 34, and 37* are rejected under 35 U.S.C. 103(a) as being unpatentable over *Feinstein (US 6,466,198 B1)* in view of *Svancarek (US 6,249,274 B1)*.

Regarding claim 1, *Feinstein* discloses a hand held device [*e.g., Figs. 1A-1C: 10*] comprising:

a processor [*e.g., Figs. 5, 8, 14, 15: 100*] that controls a display device [*e.g., Figs. 5, 8: 12*] of the hand held device;

a motion sensor [e.g., Figs. 14, 15: 82, 84, 432] mounted on a circuit board [e.g., Figs. 14, 15: 450]; wherein,

the motion sensor is coupled [e.g., Fig. 14: 90, 92, 430] to the processor and senses movement of the hand held device in more than one plane of motion [e.g., Fig. 14: X-axis, Y-axis, Z-axis] and

the movement is used by the processor to control the display device (e.g., see Column 5, Lines 24-60); wherein

the motion sensor includes an accelerometer chip [e.g., Figs. 14, 15: 82] mounted at a first angle to a first plane parallel to the circuit board (see the entire document, including Column 13, Lines 14-59).

Feinstein does not appear to expressly disclose an accelerometer chip mounted at a first non-zero angle to a first plane parallel to the circuit board such that the accelerometer chip is slanted with respect to the circuit board.

However, **Svancarek** discloses a hand held device [e.g., Fig. 2: 100] comprising:

a processor [e.g., Fig. 2: 102] that controls a display device [e.g., Fig. 1: 47] (e.g., see Column 1, Lines 17-25);

a motion sensor [e.g., Fig. 2: 104; Figs. 6AB: 180]; wherein,

the motion sensor is coupled [e.g., Fig. 2: via 106] to the processor and senses movement of the hand held device in more than one plane of motion [e.g., Figs. 6AB: 154, 156] and

the movement is used by the processor to control the display device (e.g., see *Column 1, Lines 17-25*); wherein

the motion sensor includes an accelerometer chip [e.g., *Figs. 6AB: 180*] mounted at a first non-zero angle [e.g., *Figs. 6AB: offset 45 degrees*] to a first plane [e.g., *Figs. 3A, 6AB: X-axis 142*] such that the accelerometer chip is slanted with respect to a primary axis of motion [e.g., *Figs. 3A, 6AB: X-axis 142*] (see the entire document, including *Column 6, Lines 63 - Column 7, Line 43*).

Feinstein and *Svancarek* are analogous art, because they are from the shared inventive field of hand-held devices using accelerometers to sense motion and control displays.

Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention to use *Svancarek's* accelerometer chip X-axis offsetting/slanting technique to offset/slant *Feinstein's* accelerometer chip [e.g., *Feinstein: Figs. 14, 15: 82*] at a first non-zero angle [e.g., *Svancarek: Figs. 6AB: offset 45 degrees*] to a first plane [e.g., *Feinstein: Figs. 2, 14, 15: X-axis 36*] parallel to the circuit board [e.g., *Feinstein: Figs. 14, 15: 450*] such that the accelerometer chip is slanted with respect to the circuit board, so as to provide a greatly increased range of angles of inclination which can be sensed and a highly linear output without adding any cost to the device [e.g., *Svancarek: Column 7, Lines 8-30*].

Regarding claim 2, *Svancarek* discloses the accelerometer chip is further mounted at a second non-zero angle [e.g., *Figs. 6AB: offset 45 degrees*] with respect to a second plane [e.g.,

Figs. 3A, 6AB: Y-axis 140] perpendicular to the primary axis of motion [*e.g., Figs. 3A, 6AB: X-axis 142*].

Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention to use **Svancarek's** accelerometer chip Y-Axis offsetting/slanting technique to offset/slant **Feinstein's** accelerometer chip [*e.g., Feinstein: Figs. 14, 15: 82*] at a second non-zero angle [*e.g., Svancarek: Figs. 6AB: offset 45 degrees*] to a second plane [*e.g., Feinstein: Figs. 2, 14, 15: Y-axis 32 or Z-axis 40*] perpendicular to the circuit board [*e.g., Feinstein: Figs. 14, 15: 450*], so as to provide an even more greatly increased range of angles of inclination which can be sensed and a highly linear output without adding any cost to the device [*e.g., Svancarek: Column 7, Lines 8-30*].

Regarding claim 3, **Feinstein** discloses the device is a personal digital assistant (*e.g., see Column 5, Lines 24-60*).

Regarding claim 5, **Feinstein** discloses the movement of said hand held device controls an orientation of an object [*e.g., Figs. 1A-1C: 22, 24, 26, 28*] displayed on said display device (*e.g., see Column 5, Lines 24-60*).

Regarding claim 8, the combination of **Feinstein** and **Svancarek** would result in the first non-zero angle being a slanted angle [*e.g., Svancarek: Figs. 6AB: offset 45 degree angle*] between the accelerometer chip [*e.g., Feinstein: Figs. 14, 15: 82*] and the circuit board [*e.g., Feinstein: Figs. 14, 15: 450*].

Regarding claim 25, this claim is rejected by the reasoning applied in rejecting claim 1; furthermore, **Feinstein** discloses a hand-held device [*e.g.*, *Figs. 1A-1C: 10*], comprising:

a processor [*e.g.*, *Figs. 5, 8, 14, 15: 100*] that controls a display device [*e.g.*, *Figs. 5, 8: 12*] of the hand-held device;

an accelerometer chip [*e.g.*, *Figs. 14, 15: 82, 84, 432*] coupled [*e.g.*, *Fig. 14: 90, 92, 430*] to the processor; wherein,

the accelerometer chip is mounted on a circuit board [*e.g.*, *Figs. 14, 15: 450*] in the hand-held device; wherein,

the accelerometer chip senses movement of the hand-held device in more than one plane of motion [*e.g.*, *Fig. 14: X-axis, Y-axis, Z-axis*] and

the movement is used by the processor to control the display device (*see the entire document, including Column 13, Lines 14-59*).

Feinstein does not appear to expressly disclose an accelerometer chip is mounted on a circuit board in the hand-held device in a slanted fashion that is neither flat nor perpendicular with respect to the circuit board.

However, **Svancarek** discloses a hand-held device [*e.g.*, *Fig. 2: 100*], comprising:

a processor [*e.g.*, *Fig. 2: 102*] that controls a display device [*e.g.*, *Fig. 1: 47*] (*e.g.*, *see Column 1, Lines 17-25*);

an accelerometer chip [e.g., *Fig. 2: 104; Figs. 6AB: 180*] coupled [e.g., *Fig. 2: via 106*] to the processor; wherein,

the accelerometer chip is mounted in the hand-held device in a slanted fashion [e.g., *Figs. 6AB: offset 45 degrees*] that is neither flat nor perpendicular with respect to a first plane [e.g., *Figs. 3A, 6AB: X-axis 142*]; wherein,

the accelerometer chip senses movement of the hand-held device in more than one plane of motion [e.g., *Figs. 6AB: 154, 156*] and

the movement is used by the processor to control the display device (*see the entire document, including Column 6, Lines 63 - Column 7, Line 43*).

Feinstein and ***Svancarek*** are analogous art, because they are from the shared inventive field of hand-held devices using accelerometers to sense motion and control displays.

Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention to use ***Svancarek's*** accelerometer chip X-axis offsetting/slanting technique to offset/slant ***Feinstein's*** accelerometer chip [e.g., ***Feinstein: Figs. 14, 15: 82***] so as to be mounted on the circuit board [e.g., ***Feinstein: Figs. 14, 15: 450***] in the hand-held device in a slanted fashion [e.g., ***Svancarek: Figs. 6AB: offset 45 degrees***] that is neither flat nor perpendicular with respect to the circuit board, so as to provide a greatly increased range of angles of inclination which can be sensed and a highly linear output without adding any cost to the device [e.g., ***Svancarek: Column 7, Lines 8-30***].

Regarding claim 26, **Feinstein** discloses movement of said hand-held device controls an orientation of an object [e.g., *Figs. 1A-1C: 22, 24, 26, 28*] displayed on said display device (e.g., *see Column 5, Lines 24-60*).

Regarding claim 27, **Svancarek** discloses the accelerometer chip is mounted at an angle theta [e.g., *Svancarek: Figs. 6AB: theta = 45 degrees*] with respect to a first plane [e.g., *Figs. 3A, 6AB: X-axis 142*]; wherein,

the angle theta is non-zero and non-orthogonal with respect to the plane (*see the entire document, including Column 6, Lines 63 - Column 7, Line 43*).

Therefore, combining **Svancarek's** accelerometer chip X-axis offsetting/slanting technique with **Feinstein's** PDA would result in **Feinstein's** accelerometer chip being mounted at a 45 degree angle theta with respect to a plane parallel [e.g., *Feinstein: Figs. 2, 14, 15: X-axis 36*] to the circuit board; wherein, the angle theta is non-zero and non-orthogonal with respect to the plane parallel to the circuit board.

Regarding claim 28, **Svancarek** discloses the angle theta is selected to sense movement of the hand-held device in more than one plane of motion [e.g., *Figs. 6AB: 154, 156*] (*see the entire document, including Column 6, Lines 63 - Column 7, Line 43*).

Regarding claim 30, **Svancarek** discloses the accelerometer chip is mounted at an angle phi [e.g., *Figs. 6AB: $\phi = 45$ degrees*] with respect to a second plane [e.g., *Figs. 3A, 6AB: Y-axis 140*] perpendicular to the first plane [e.g., *Figs. 3A, 6AB: X-axis 142*]; wherein, the angle theta is non-zero and non-orthogonal with respect to the plane perpendicular to the circuit board (*see the entire document, including Column 6, Lines 63 - Column 7, Line 43*).

Therefore, combining **Svancarek's** accelerometer chip Y-axis offsetting/slanting technique with **Feinstein's** PDA would result in **Feinstein's** accelerometer chip being mounted at a 45 degree angle phi with respect to a plane [e.g., **Feinstein: Figs. 2, 14, 15: Y-axis 32 or Z-axis 40**] perpendicular to the circuit board; wherein,

the angle theta is non-zero and non-orthogonal with respect to the plane perpendicular to the circuit board.

Regarding claim 31, **Svancarek** discloses the angle phi is selected to sense movement of the hand-held device in more than one plane of motion [e.g., *Figs. 6AB: 154, 156*] (*see the entire document, including Column 6, Lines 63 - Column 7, Line 43*).

Regarding claim 33, this claim is rejected by the reasoning applied in rejecting claims 1 and 25; furthermore, **Feinstein** discloses a device [e.g., *Figs. 1A-1C: 10*], comprising:

a display [e.g., *Figs. 5, 8: 12*];

a processor [e.g., *Figs. 5, 8, 14, 15: 100*] that controls the display of the device;

a motion sensor [e.g., *Figs. 14, 15: 82, 84, 432*] mounted on a circuit board; wherein,

the motion sensor is coupled [e.g., Fig. 14: 90, 92, 430] to the processor and senses movements of the hand-held device in more than one plane of motion [e.g., Fig. 14: X-axis, Y-axis, Z-axis] and the movements are used by the processor to control an orientation of an object [e.g., Figs. 1A-1C: 22, 24, 26, 28] viewed on said display device (e.g., see Column 5, Lines 24-60); wherein the motion sensor includes an accelerometer chip [e.g., Figs. 14, 15: 82] mounted at an angle theta with respect to a first plane parallel to the circuit board (see the entire document, including Column 13, Lines 14-59).

Feinstein does not appear to expressly disclose the angle theta is non-zero and non-orthogonal.

However, **Svancarek** discloses a device [e.g., Fig. 2: 100], comprising:
a display [e.g., Fig. 1: 47];
a processor [e.g., Fig. 2: 102] that controls the display of the device (e.g., see Column 1, Lines 17-25);
a motion sensor [e.g., Fig. 2: 104; Figs. 6AB: 180] mounted on the device; wherein the motion sensor is coupled [e.g., Fig. 2: via 106] to the processor and senses movements of the hand-held device in more than one plane of motion [e.g., Figs. 6AB: 154, 156] and the movements are used by the processor to control an orientation of an object [e.g., a cursor or vehicle] viewed on said display device (e.g., see Column 1, Lines 17-25); wherein

the motion sensor includes an accelerometer chip [e.g., *Figs. 6AB: 180*] mounted at an angle theta [e.g., *Figs. 6AB: theta = 45 degrees*] with respect to a first plane [e.g., *Figs. 3A, 6AB: X-axis 142*]; wherein,

the angle them is non-zero and non-orthogonal (*see the entire document, including Column 6, Lines 63 - Column 7, Line 43*).

Feinstein and ***Svancarek*** are analogous art, because they are from the shared inventive field of hand-held devices using accelerometers to sense motion and control displays.

Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention to use ***Svancarek's*** accelerometer chip X-axis offsetting/slanting technique to offset/slant ***Feinstein's*** accelerometer chip [e.g., ***Feinstein: Figs. 14, 15: 82***] so as to be mounted at a 45 degree angle theta with respect to a first plane parallel [e.g., ***Feinstein: Figs. 2, 14, 15: X-axis 36***] to the circuit board [e.g., ***Feinstein: Figs. 14, 15: 450***]; wherein, the angle them is non-zero and non-orthogonal, so as to provide a greatly increased range of angles of inclination which can be sensed and a highly linear output without adding any cost to the device [e.g., ***Svancarek: Column 7, Lines 8-30***].

Regarding claim 34, ***Svancarek*** discloses the accelerometer chip is mounted at an angle phi [e.g., *Figs. 6AB: phi = 45 degrees*] with respect to a second plane [e.g., *Figs. 3A, 6AB: Y-axis 140*] perpendicular to the first plane [e.g., *Figs. 3A, 6AB: X-axis 142*]; wherein,

the angle theta is non-zero and non-orthogonal (*see the entire document, including Column 6, Lines 63 - Column 7, Line 43*).

Therefore, combining **Svancarek's** accelerometer chip Y-axis offsetting/slanting technique with **Feinstein's** PDA would result in **Feinstein's** accelerometer chip being mounted at a 45 degree angle phi with respect to a plane [e.g., **Feinstein: Figs. 2, 14, 15: Y-axis 32 or Z-axis 40**] perpendicular to the circuit board; wherein, the angle theta is non-zero and non-orthogonal with respect to the plane perpendicular to the circuit board.

Regarding claim 37, **Feinstein** discloses the motion sensor is embedded in the device (*see the entire document, including Column 13, Lines 14-59*).

22. *Claims 4, 29, 32, 35, and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Feinstein (US 6,466,198 B1)** and **Svancarek (US 6,249,274 B1)** as applied respectively to claims 1, 27, 30, and 34 above, and further in view of **Darley (US 6,122,340 A)**.*

Regarding claim 4, **Feinstein** and **Svancarek's** resultant first non-zero [e.g., **Svancarek: Figs. 6AB: 45 degree offset**] angle between the accelerometer chip [e.g., **Feinstein: Figs. 14, 15: 82**] and the circuit board [e.g., **Feinstein: Figs. 14, 15: 450**] is selected to decrease the Z footprint of the hand-held device (e.g., *compared to a 46 or more degree angle between the accelerometer chip and the circuit board*).

However, should it be shown that neither **Feinstein** nor **Svancarek** teaches decreasing the Z footprint of the hand-held device with sufficient specificity:

It is noted the instant application states, "*It is also a further feature of the instant invention described in both FIGS. 6 and 7 that in order to minimize the physical space of the device (also known as minimizing the Z footprint), the angles 'phi' and 'theta' at which the chip is mounted is 19 degrees with respect to the circuit board*" (see page 9, lines 9-12 of the specification).

Svancarek's 45 degree angle is merely one, non-limiting, example offset given by *Svancarek*. It would have been an obvious design choice to mount the accelerometer chip offset angles other than 45 degrees -- including, for example, *19 degrees*. As doing so would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

Moreover, *Darley* discloses an accelerometer chip [e.g., *Fig. 7: 704*] being mounted at any acute angle [e.g., *Fig. 7: θ*] between the accelerometer chip and a circuit board [e.g., *Fig. 7: 700*] (see the entire document, including Column 8, Line 62 - Column 9, Line 20).

The Applicant's preferred *19 degree* angle is encompassed within *Darley's* acute angle range.

Feinstein, *Svancarek*, and *Darley* are analogous art, because they are from the shared inventive field of devices using accelerometers to sense motion.

Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention to use *Svancarek's* accelerometer chip X-axis offsetting/slanting technique to offset/slant *Feinstein's* accelerometer chip [e.g., *Feinstein: Figs. 14, 15: 82*] to one of *Darley's*

acute angles [e.g., *Darley: Fig. 7: Θ*]; because *Svancarek* does not teach being limited to only a 45 degree accelerometer offset.

It would have been obvious to one of ordinary skill in the art at the time of invention, because the substitution of one known *acute angle* (e.g., *19 degrees*) *offset* for another *acute angle* (e.g., *45 degrees*) *offset* would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

See *KSR International Co. v. Teleflex Inc.*, et al., Docket No. 04-1350 (U.S. 30 April 2007).

Regarding claim 29, this claim is rejected by the reasoning applied in rejecting claim 4; furthermore, *Feinstein* and *Svancarek's* resultant angle theta [e.g., *Svancarek: Figs. 6AB: 45 degree offset*] is selected to optimize height of the hand-held device (e.g., *compared to a 46 or more degree angle between the accelerometer chip and the circuit board*).

Regarding claim 32, this claim is rejected by the reasoning applied in rejecting claim 4; furthermore, *Feinstein* and *Svancarek's* resultant angle phi [e.g., *Svancarek: Figs. 6AB: 45 degree offset*] is selected to optimize height of the hand-held device (e.g., *compared to a 46 or more degree angle between the accelerometer chip and the circuit board*).

Regarding claim 35, this claim is rejected by the reasoning applied in rejecting claim 4; furthermore, *Feinstein* and *Svancarek's* resultant angle theta [e.g., *Svancarek: Figs. 6AB: 45 degree offset*] and the angle phi [e.g., *Svancarek: Figs. 6AB: 45 degree offset*] are selected to

decrease a Z footprint of the device (e.g., compared to a 46 or more degree angle between the accelerometer chip and the circuit board).

Regarding claim 36, this claim is rejected by the reasoning applied in rejecting claim 4; furthermore, **Feinstein** and **Svancarek's** resultant discloses the angle theta [e.g., **Svancarek: Figs. 6AB: 45 degree offset**] and the angle phi [e.g., **Svancarek: Figs. 6AB: 45 degree offset**] are selected to optimize a size of the device (e.g., compared to a 46 or more degree angle between the accelerometer chip and the circuit board).

Response to Arguments

23. Applicant's arguments filed on 2 September 2009 have been fully considered but they are not persuasive.

In response to applicant's argument that **Darley (US 6,122,340 A)** and **Svancarek (US 6,249,274 B1)** are nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992).

In this case, **Svancarek** and **Darley** are analogous art, because they are from the shared inventive field of positioning/mounting accelerometers at offset angles within hand-held devices so as to sense user motion.

Applicant's arguments with respect to *claims 1-5, 8, and 25-37* have been considered but are moot in view of the new ground(s) of rejection.

By such reasoning, rejection of the claims is deemed necessary, proper, and thereby maintained at this time.

Conclusion

24. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff Piziali whose telephone number is (571) 272-7678. The examiner can normally be reached on Monday - Friday (6:30AM - 3PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chanh Nguyen can be reached on (571) 272-7772. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jeff Piziali/
Primary Examiner, Art Unit 2629
21 February 2010